Commission should approach them this way, striving toward the development of universal service support systems that take into account the federal interests associated with and advanced by universal service.

In light of the broad federal interests associated with universal service, the Commission should craft a broadly based funding mechanism for universal service support systems. That mechanism should be based on telecommunications service provider funding based on retail revenues, as supported by a number of commentors.

By adopting the BCM/ARMIS, acknowledging the broad federal interests associated with universal service, including high-cost funding matters, and crafting a broadly based funding mechanism (i.e., retail revenue assessments), the Commission will demonstrate strong federal leadership in the area of universal service. That leadership will, in turn, be supported by tools and systems evidencing economic and policy integrity. All in all, a powerful combination with respect to an important social and regulatory initiative -- universal service for all Americans.

Respectfully submitted,

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May 7, 1996

APPENDIX A

APPENDIX A

Preliminary Response to ETI's Analyses

General Observations

Economics and Technology, Inc.'s ("ETI") analysis discusses the Benchmark Cost Model ("BCM" or "Model") and the enhancements it feels are necessary in order for the Model to calculate a cost for universal service that ETI defines and supports. The majority of ETI's "corrections" focus on what it describes as economies of scale that are somehow missed by the BCM's cost algorithms or incorrectly shared between primary residential lines and all other lines.

As a general matter, the lack of business lines is the only scale of efficiency currently missing from the BCM.[1] While the Joint Sponsors agree that the inclusion of business lines is important for determining a total cost of local service in urban areas, the Joint Sponsors determined that for purposes of identifying high cost areas, business lines are not a critical element. High cost areas by their very nature contain low concentrations of business lines. Therefore, an accurate inclusion of business lines has little impact upon cost calculations for these areas.

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[1] One of the economies of scale ETI states that the BCM should recognize is the addition of business lines in its calculation of loop cost. U S WEST, Inc. ("U S WEST") agrees. The Joint Sponsors (U S WEST, Sprint Corporation, The NYNEX Telephone Companies and MCI Telecommunications Corporation) have stated that a business line variable will be added to the BCM. Joint Sponsors Feb. 21, 1996 *Ex Parte* Filing. The Joint Sponsor's intention is to utilize business lines by Census Block Groups ("CBG"). Currently, U S WEST is exploring direct third-party sources of business line data by CBG area. At this point, no suppliers of this data have been found. Additionally, U S WEST is working with other parties to develop statistical relationships between business line data and public data sources so as to derive business line data by CBG. However, using proprietary business line location information in both Colorado and California has produced no statistically reliable information to estimate the number of business lines by CBG. Therefore, the use of density or household ratios to derive business lines yields highly inaccurate results on a CBG level. Use of these simplistic ratios distorts CBG costs by either putting in too many business lines in a primarily residential CBG or putting to few business lines in a primarily business CBG.

ETI acknowledges the efficiencies to be gained by providing service over a unified network[2] for primary residential lines, secondary residential lines, and business lines and correctly (in theory) suggests that primary residential lines should share in these efficiencies. However, ETI's definition of a static demand for primary residential services is totally at odds with reality and results in primary residential lines sharing all economies of scale but none of the added costs of a unified network.

ETI's Definitions of "Long-Run" and "Demand"

As a threshold matter, one needs to examine ETI's definition of "demand," as utilized by ETI in its analyses of the BCM cost development. Once having actually identified or discerned what that definition is, one has to ascertain whether the definition and its application is consistent with and/or useful in understanding the costs of deploying a network.

ETI argues that, conceptually, a proxy model should develop a Total Service Long-Run Incremental Cost ("TSLRIC") for a definition of local service. There are two problems with this argument. First, the demand included in the BCM does not represent the "long-run" planning horizon that one would find in a TSLRIC model. Second, even within a Long-Run Incremental Cost ("LRIC") approach, ETI's assumption that one and only one residential access line per legal dwelling unit[3] would be an appropriate assumption is incorrect.

To begin with the "long-run" issue, ETI states that "[f]or [its] purpose, the 'long run' should be defined to mean a planning horizon in which full replacement of all plant, equipment and other investment, as well as a major organizational restructuring, is physically possible if economically justified, but not so long that all existing plant

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[2] "That the LEC can realize significant scale and scope economies by designing its network to satisfy multiple sources of demand is not disputed..." The National Cable Television Association, Inc. ("NCTA") Comments, filed Apr. 12, 1996 at Attachment A , "The Cost of Universal Service - A Critical Assessment of the Benchmark Cost Model," ("ETI Study") at10 n.25.

[3] Of course, the fund administrator would utilize updated Census data for determining funding amounts, as well as a normal engineering planning horizon.

will have become worn out and in need of replacement merely because of because of its age or physical condition."[4] While this "long-run" approach is appropriate for a TSLRIC model, and might actually be something the BCM could accommodate, the BCM does not take this view of "long-run" in its current modeling. Nor, as discussed below, does ETI's demand assumptions support its "definition" of "long-run."

The BCM is currently modeled on 1990 household counts, taking into account a normal engineering horizon, which will allow the network to accommodate household growth in the CBGs for approximately up to three years.[5] So, the BCM is "at odds" with ETI on the appropriate "long-run" horizon for a high-cost funding model. We remain committed to the BCM's "long-run" assumptions, particularly since ETI's "demand" discussion does not compel a different result.

ETI's "long-run" assumptions cannot be divorced from its "demand" assumptions. ETI has to chose between creating a network that has sufficient capacity to accommodate "long-run" demand and only putting in facilities to satisfy current demand, while still recognizing the growth and changes that will occur during the predicted planning horizon. ETI never comes to grips with this dilemma.

As ETI recognizes, "in specifying an outside plant construction job, the local exchange carrier ("LEC") confronts an economic trade-off between incurring higher *initial* costs (to provide additional capacity for growth) vs. higher *future* costs if more frequent relief jobs are required because insufficient capacity was installed at the outset."[6] While appreciating the conundrum faced by LECs, ETI does little -- by way of analysis -- to resolve it.

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[4] ETI Study at 16.

[5] See Appendix F at 10.

[6] ETI Study at 102.

ETI makes the assumption that there is no growth in households above the 1990 level. It further assumes that the demand for the first residential line to these households is static.[7] This is unrealistic because development patterns change, people subdivide houses, and redevelopment is turning warehouse districts into posh residential districts. Thus, there is not only demand for first lines due to growth but to churn.

Given this predictable expectation, ETI's observations suggest that its model assumptions are crafted with an expectation that there will be "higher *future* costs" to handle this growth or churn, rather than addressing this known and predictable phenomena in the initial model assumptions.

ETI's demand assumptions are in conflict with its definition of its long-term planning horizon. Its assumption that first line demand is non-growing and non-variable in terms of movement or changes, particularly as it interplay's with ETI's long-term planning horizon, is illogical for two reasons.

First, until the birth rate in the United States falls below the death rate, no serious TSLRIC study would deny that there will be substantial household growth over the time included in the long-term planning horizon of such study. That growth will require additional loop and switching facilities, beyond the number of 1990 households included in the BCM.

Second, development patterns in both urban and rural areas are constantly changing, as discussed above, which changes the first-line demands on the local network for both distribution plant and feeder plant. If these demands are to be met in a timely and cost-effective manner then additional network capacity needs to be available. Any universal service high-cost funding model should clearly incorporate this additional demand at the outset, rather than expect -- but not provide for -- a "corrective" supplemental provisioning variable later.

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[7] ETI states that "[i]f demand for residential access were limited to one line per household, there would be no need for the LEC to provide distribution capacity for either growth or to accommodate variability and churn." Id. at 103.

Since it is impossible for a telecommunications service provider to stop or significantly thwart changes in neighborhood development patterns, or to stop the number of households in the United States from increasing, network fill for first-line demand cannot be assumed to be the 95% as ETI so adamantly argues that it is. While the BCM includes a range of distribution fill factors from 25% to 75%, this assumption -- allowing as it does for growth in the fill factor assumption itself -- is the more reasonable and logical.

Under ETI's analyses, additional capital costs would have to be added to its model to reflect the cost of returning to neighborhoods to bury or string additional facilities on a continual as-needed basis, in order to supplement the distribution and feeder plant to meet the demands of growth and changes in development patterns. The alternative to recognizing these secondary capital costs is to provide spare capacity in the *initial* costs in order to accommodate growth and changes in development patterns.

ETI's analysis also does not recognize the "secondary cost" associated with residential users waiting for facilities to be put in place for their first-line demand because facilities are not available, due to ETI's assumed 95% fill rate. The BCM, on the other hand, by utilizing a lower "fill factor" assumption, eliminates these costs from the cost calculation in the first instance.

ETI's Feeder Investment Analysis

An aspect of ETI's economies of scale analysis argues that the BCM does not properly allocate shared feeder investment among CBGs.[8] In this argument, ETI contradicts its own TSLRIC construct concerning the demand for first-line residential service, as well as modifying, due to its apparent disagreement, the BCM's basic network deployment assumptions.[9]

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[8] Id. at 93.

[9] The BCM assumes that every U.S. household reflected in the 1990 Census is connected to the network in the same time frame and in a uniform manner.

ETI points out that there are several alternative methods by which scale of economies can be apportioned among a group of individual CBGs. However, ETI fails to specify that these alternative methods are inconsistent with its own assumption of total service cost.

In its analysis, ETI subdivides the total demand for its defined service, so that facilities are constructed to some primary CBGs without consideration for the service demand within secondary CBGs. ETI's analysis then goes on to calculate a cost of incremental growth-in-demand by serving the secondary CBGs. This incremental growth-cost calculation yields a different result than a total service cost calculated consistent with the assumption of total service demand.

Since both the BCM and ETI's assumptions specify that service is provisioned to all CBGs contemporaneously, the BCM's method of allocating shared feeder plant is both proper and correct. The alternative methods described by ETI have no validity in a context of total service.

ETI's Analyses of Annual Cost Factors

The BCM utilizes one of two cost factors that convert investment calculated by the Model into annual and monthly costs that include expenses and return. U S WEST supports the cost factor described as the ARMIS factor. This factor reflects the historical relationship of the total of return on investment, expenses, and taxes to gross investment.

However, this ratio is applied to the hypothetical network investment calculated by the BCM, rather than book or actual investment.[10] Therefore, use of the ARMIS factor creates a lower level of expense than is currently booked by LECs.

[10] The BCM investment levels are lower than book investments because the BCM designed its network with the knowledge of the physical locations of all anticipated demand for service. This allows the model to use the most efficient feeder and distribution system cable sizes and place the network in a single operation. In contrast, actual networks are expanded over time, where specific routes are reinforced and distribution systems may be

ETI objects to the use of this historical cost and investment relationship. Specifically, it states that the levels of depreciation expense reflected in the historical accounting data are overstated, that the return on investment included in the historical data is overstated, and that the use of the ARMIS factor includes expenses that should be partially or totally excluded as a cost-of-basic local service.

First, U S WEST addresses ETI's economically and logically flawed analysis of depreciation. U S WEST then addresses other cost factor issues.

ETI begins its analysis of depreciation expense with a conclusion. ETI states that the correct depreciation lives for investments that provide primary residential access should be 20 years, and the depreciation rate should be 5%. This is in contrast to the historical accounting depreciation rate for Tier 1 LECs, which is 7%, equating to an average life of approximately 14.3 years.[11]

While agreeing with ETI that the current depreciation rates should change, U S WEST's internal studies show that economic depreciation should, in fact, be shorter than the depreciation lives reported in historical accounting data like ARMIS.

U S WEST believes that, ideally, historical levels of depreciation should not be used as a basis for cost studies. We come to that conclusion, however, not because those historical levels produce too high a level of depreciation expense (as ETI argues) but because they produce too low a level of depreciation expense. Historical levels do not adequately reflect the revolutionary changes that are occurring in today's telecommunications network, as a result of the acceleration of technological change and the introduction of competition. The appropriate lives to be used in cost studies are lives that reflect these changes, lives that are significantly shorter than those upon which historical depreciation levels are based.

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supplemented. This creates additional construction costs over time. Additionally, the BCM utilizes only forward-looking technology, whereas book investment reflects the historical mix of all plant in service.

[11] ETI Study at 69.

While the BCM currently utilizes a "super factor" that includes all expenses, it can be adjusted to reflect economic depreciation lives by removing the historical depreciation percentage component and replacing it with an economic depreciation lives component. U S WEST would support this modification to the BCM/ARMIS. We encourage the Federal Communications Commission ("Commission") to give serious consideration to this modification.

Beyond the argument that current depreciation lives are too short, however, U S WEST herein argues that ETI offers no analysis that demonstrates a 20-year life is appropriate for a Regional Bell Operating Company's ("RBOC") investment associated with primary residential service. ETI's rather casually stated "preference," is in stark contrast to the practice of RBOCs, who provide detailed studies analyzing depreciation lives for their assets. The only support for ETI's position is its apparent belief that the current depreciation levels are too high and account for too great a percentage of total LEC expenses.

ETI's depreciation analysis appears to be based on a non-stated but unavoidably discerned predisposition: that there is a "universal service network" separate and apart from a LEC's integrated, full-service network. Beginning with that flawed supposition, ETI's arguments then depend more on speculation, conjecture and rhetoric than on fact. Its analysis is a far cry from a sound economic analysis and it should not form the basis of support for a reasoned policy decision.

ETI's entire analysis rests on the argument that current depreciation lives are the result of LECs "prematurely retiring" plant assets;[12] and its intuition that somehow switching equipment, electronic circuit

[12] As its only anecdotal example (and one that is barely relevant to the point), ETI cites the digital switching lives of Southern New England Telephone ("SNET"). With this example, ETI discusses SNET's depreciation practices with respect to what ETI characterizes as the too-early or premature retirement of early-vintage digital switches. From this example, ETI reaches -- what in U S WEST's opinion -- can only be characterized as a counter-intuitive conclusion, i.e., that depreciation lives for telecommunications plant will somehow be longer in the future. Id. at 68-69.

equipment and cables will provide longer terms of economic and technologic service in the future. ETI's analyses leaves much to be desired. And, its intuition can only be called "counter-intuitive."

ETI ignores the plain fact that retirement of switches (including digital ones) is a part of an ongoing evolution of the entire telephone network. That evolution will continue into the future, although at a greatly accelerated pace over that remarked on by ETI. Just as electro-mechanical switches were replaced by analog electronic switches, digital switches were replaced by (presumably) better digital switches, with more features and functionalities.[13] Today's technologies (even if digital in their fundamental characteristics) will be replaced by something better, which will more effectively meet the needs of tomorrow's consumers. LECs are not barred from going after and deploying the same advanced customer-service technology that the new entrants so aggressively *tout*.

ETI goes on to claim that existing technologies are adequate to provide basic residential service and need not be retired. But ETI's argument ignores the fact that residential consumers have indisputably benefited from both past and current modernizations of the telephone network, both in terms of increased cost efficiencies and increased service capabilities that are derived from the deployment of digital switches, digital carrier systems, and fiber facilities. Furthermore, the Telecommunications Act of 1996 clearly states Congress' intent that the definitions of universal service continues to evolve over time to potentially include new and advanced telephone services, if only for this reason alone, ETI's assertion that universal service costs should be based on outdated technology falls apart.

[13] As ETI observes, "[s]witching costs have decreased significantly since 1990, in part [due] to the rapid pace of technological advances in the computer and electronics field, and in part due to the intense competition that has emerged in the switch market." Id. at 82. The fact that switching costs have decreased suggests shorter deprecation lives are appropriate, rather than longer ones.

LECs, as part of their traditional universal service social contract and as part of their on-going service quality commitments, have been and will continue to be expected to build networks that serve the needs of all classes of consumers, not just the needs of those who would be content to be served by an electro-mechanical office with its limited service offerings or those for whom multi-party service is acceptable. Clearly older technologies do not provide the services that consumers have come to expect and demand in terms of reliability, service quality, and cost. New entrants would not settle for such technologies and neither should LECs be expected to.

ETI's Analysis of Other Cost Factor Components

ETI objects to the BCM's use of the LECs' authorized interstate rate of return of 11.25% as a component part of the ARMIS factor.[14] ETI feels that a jurisdictional weighting of state and federal rates of return would be more appropriate.

The BCM was originally developed for use in developing an interstate fund under the authority of the Commission. Since the purpose of this docket is still to create an interstate universal service fund, it is only appropriate that the authorized interstate rate of return be utilized.[15]

The last major area that U S WEST addresses herein is the appropriate expenses for providing universal service. ETI provides an expense analyses, where it determines (by its own subjective standards) which expense accounts are associated with the provision of universal service and which accounts are associated with other services. A more constructive and appropriate analysis is to examine the level of expenses total expenses

[14] Id. at 69.

[15] For the interstate funding mechanism to use an alternative rate of return, the Commission would have to institute a separate proceeding either to find the current rate of return not reasonable or to calculate an appropriate rate of return.

produced by the two cost factors represented in the originally-filed BCM (the ARMIS factor and the MCI/Hatfield factor).

None of ETI's expense factor discussions recognize that the ARMIS factor is applied to the BCM's calculated investment levels. This is a key concept, since the BCM/ARMIS calculates lower investment levels than the historical accounting data, which in turn reduces the following expenses calculated by the Model. Therefore, using the ARMIS factor reduces expenses from the historical levels by significant amounts. No further reduction is required or appropriate.

On the other hand, using ETI's or the MCI/Hatfield factors and methods serves to inappropriately reduce expenses a second time. Both arbitrarily exclude expense accounts that provide basic service product management, as well as other customer or account operations activities.

Finally, ETI's methods can accomplish a third expense reduction when its expense methods are coupled with the undocumented and arbitrary changes in inputs to the BCM. ETI's recommended input changes, such as increasing fill factors, lowering switching and digital circuit equipment prices, all lower calculated investment levels and therefore lower the expense levels calculated by the BCM.

Switch Costs and Digital Loop Carrier Costs

ETI accuses the BCM Joint Sponsors of intentionally providing outdated and misleading switch-cost data. It takes the LECs to task for refusing to disclose switch costs that are held by the LECs as proprietary information.[16]

ETI's objections seriously miss the mark, as the LECs' position is one that has not only been approved (albeit in a somewhat different context), but has been endorsed as a position that promotes -- rather than retards -- competition.[17]

[16] ETI Study at 85-86.

ETI is correct in its observation that, in crafting the BCM, the Joint Sponsors did not utilize proprietary information. Rather, to the largest extent possible, the Joint Sponsors used public data sources in developing the BCM. While this limited the available price input information for switch costs, it certainly has the value of allowing the data to be secured and analyzed by other third parties[18] -- something that cannot currently be said for Hatfield's cost "approximations."[19]

Additionally, public data sources add to the consistent and uniform application of the BCM's cost estimates when identifying high-cost areas across the nation.[20] The Joint Sponsors will continue to provide accurate and verifiable price inputs from public sources to the greatest extent possible.

The practice of the Joint Sponsors should be compared to that of ETI. For example, when discussing the BCM price inputs for subscriber loop carrier systems, ETI asserts that -- frustrated by its inability to obtain "accurate cost data" -- it "examined SLC and AFC price data based upon approximations made by Hatfield Associates, Inc. (HAI) in the California USF proceeding[.]"[21] In essence, the fundamental basis for ETI's

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[17] In CC Docket No. 94-128, Memorandum Opinion and Order, the Common Carrier Bureau found "[t]he cost support models used by the BOCs to develop ONA cost support employ proprietary information in the form of pricing information supplied by switch vendors. Bellcore and US West also hold intellectual property rights in these cost support models. The Commission has determined that these models are exempt from disclosure under Exemption 4 of the Freedom of Information Act, 5 U.S.C. 552(b)(4)(FOIA). In deciding not to disclosure this information, the Commission determined that disclosure would not be in the public interest because it could cause substantial competitive harm to carriers and switch vendors and might cause switch manufacturers to stop providing this proprietary information, which would make it difficult or impossible to update the computer models to reflect changes in switch prices or development of new switching technologies. This in turn would render the computer models meaningless, and the Commission would be deprived of an important tool needed to evaluate ONA tariffs." In the Matter of Open Network Architecture Tariffs of US West Communications, Inc., CC Docket No. 94-128, Memorandum Opinion and Order, FCC 96-35, rel. Feb. 1, 1996 ¶ 8.

[18] Surrebuttal of Peter B. Copeland, Docket No. 95-2206-01, before the Utah Public Service Commission, May 1, 1996, at 6 ("Copeland Rebuttal").

[19] See discussion immediately below.

[20] Copeland Rebuttal at 6.

[21] ETI Study at 116.

conclusions are its "examination" of Hatfield's "approximations." ETI's "evidence" renders its objections to the use of publicly-available data as the source of conclusions and assumptions almost laughable.

Apparently, ETI believes it appropriate to utilize another's unsubstantiated and undocumented price assumptions. Both ETI's and Hatfield's price assumptions are guesses of self-described "experts,"[22] whose sole purpose is to underestimate the cost of providing local residential service.

Putting aside for the moment, ETI's unsubstantiated grievances with the current BCM approach, the Joint Sponsor's have already indicated an interest in attempting to devise a more robust switching module that reflects different switch types and architectures.[23] Within the BCM itself, however, the switch module will continue to recognize that all switches have fixed-cost components as well as per-line cost components. This position is in contrast to that pressed by ETI.

ETI recommends a switch structure that has no fixed-cost component.[24] In such an analysis, a switch with a single customer, for example, is included in the ETI analysis as being a "cost" of $167.[25] This ignores, obviously, the common elements and costs of the switch (such as its original overall procurement, the main distributing frame, the back-up power, software, switch fabric, etc.) Thus, while ETI might attempt to "correct" the BCM's existing switch algorithm, its correction is absurd.

In another example, suggests that it can reduce the cost to provide a stand-alone central office switch (or even a remote switch) to serve 50 residential and business customers for approximately $8,500 of investment. This investment number is not even large enough to purchase an unequipped remote terminal cabinet for a digital

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[22] For a discussion of Hatfield, see text at 11-14.

[23] See Joint Sponsor's Feb. 21, 1996 *Ex Parte* Filing.

[24] Hatfield also supports such a position. See *Ex Parte* Letter from Leonard S. Sawicki to W. Caton, FCC, filed Mar. 28, 1996 (The Cost of Basic Network Elements: Theory, Modeling and Policy Implications, prepared by Hatfield Associates for MCI, at 12-13.

[25] ETI Study at 84.

loop carrier system, much less a switch housed in an environmentally controlled structure. The type of price input "corrections" provided by ETI demonstrates that it is not so much concerned with accurately modeling the structure of real or actual network costs, as it is in reducing the level of network costs that the model produces -- whatever the logic or reasonableness of the result.

Cross-Over Choice Between Copper and Fiber Facilities

ETI questions the use of a "hard-coded" distance in the BCM, which represents the total loop distance at which engineers deploy fiber facilities instead of copper facilities.[26] ETI states that the BCM copper/fiber trade-off assumption is uneconomic.[27]

ETI's analysis, as well as its understanding of the factors that are considered in any engineering decision to switch from copper to fiber facilities, is flawed to the extent that ETI believes that the current BCM assumption is improper.

Typically, for a carrier serving area, copper transmission lengths for 24-gauge, non-loaded cable are limited to 12,000 feet. If a decision is made to extend this distance beyond 12,000 feet, additional costs, such as lower-gauge cable, range extenders, and other conditioning equipment, need to be recognized in order to maintain the same transmission parameters.

When ETI performed its economic cross-over analysis, none of these additional costs were included. Therefore, ETI's economic analysis is meaningless because if you cannot communicate over the loop, the fact that it might be "cheap" (if communication was possible) is something most folks wouldn't spend much time debating.

[26] The BCM assumes that for loops beyond 12,000 feet, the feeder portion of the loop would be served on fiber facilities, based upon sound engineering parameters.

[27] ETI Study at 112.

APPENDIX B

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Executive Director-
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U S WEST

April 16, 1996

Mr. Richard Metzgar
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Dear Mr. Metzgar:

At the meeting of the Joint Board on Universal Service on April 12, 1996, Commissioner Sharon Nelson of the Washington Utilities and Transport Commission (WUTC) announced a recent decision which they had issued in U S WEST's rate case proceeding. She stated that in this decision they had found that the $10.50 price for basic residential service was above the cost of providing that service. You requested that I provide you with a copy of that decision, which I have attached to this letter.

U S WEST strongly disagrees with many aspects of this decision. I have also attached the statement of Dennis Okamoto, U S WEST Vice President - Washington, responding to the order in general. Of particular relevance to the universal service proceeding are the conclusions which the Washington Commission reaches concerning the cost of providing basic residential service.

On Page 7 of their decision the WUTC states:

> "[T]he incremental cost of local service is less than $5 per month. Even if the entire incremental cost of the "loop" -- the facilities needed for the connection between the central office and the consumer's telephone which also carry long distance and specialized services, such as voice mail, as well as local service -- is allocated to the local rate payer the price covers that cost. There simply is no local service subsidy."

The WUTC bases its conclusions on a cost study done by Hatfield and Associates which was submitted by AT&T and supported by MCI. They further make the amazing assumption that the "incremental" cost of the local service does not include the local loop. The incremental cost of local service is then computed by taking the total cost which Hatfield develops for local service -- $13.38 per month -- and subtracting the cost which Hatfield develops for the local loop component of this cost -- $8.96 per month. The result of this subtraction is $4.42 per month.

In describing the Hatfield model, the WUTC states that the model "...incorporates elements of the Benchmark Cost Model (BCM) which has been presented to the FCC by U S WEST Communications and others." U S WEST is concerned that recently there have been allusions that since the Hatfield study incorporates elements of the BCM, that U S WEST somehow supports the Hatfield model. We do not.

For over a year, U S WEST has worked in good faith with MCI and the other "Joint Sponsors" (NYNEX and Sprint) to develop a consensus approach to estimating the investment required to serve different customers. The results of this work are reflected in the Benchmark Cost Model (BCM) which was placed on the record in CC Docket 80-286. In areas where we could not reach agreement with MCI, such as the appropriate expense factors to apply to investment to develop the monthly cost of service, we included two estimates for this factor and "agreed to disagree". We also had an agreement among the Joint Sponsors that if one Sponsor were to change any of the assumptions or factors in the model that they could not represent the results as being supported by the other Joint Sponsors.

In our joint filing of BCM results submitted to the FCC on December 1, 1995, the following data for the cost of basic residential service was presented for the State of Washington:

Using U S WEST's expense factor:	$23.48/month
Using MCI's expense factor:	$17.02 /month

In the transmittal letter for the BCM results, the following statement appears: "The Joint Sponsors support the use of the BCM for the analysis of the targeting of explicit high cost support. They do not agree on its use for other purposes such as the setting of rates for telephone service." This statement was included in the transmittal for good reason. In the Executive Summary, the purpose of the study is stated to be "...to identify areas where the cost of service can reasonably be expected to be so high as to require explicit high cost support for the preservation of Universal Service." The summary states that the model does not produce the actual cost of service but rather "...the relative costs of serving customers residing in given areas...". Because it was built for this purpose, some elements of the cost of service which would not vary in different geographic areas were not included. Also, in extremely dense urban areas there are additional cost factors which we did not attempt to measure since it was assumed that no high cost support would be provided to such areas.

On February 21, 1996 the Joint Sponsors made an ex-parte filing outlining proposed enhancements to the BCM. In this filing we described what had been learned through four BCM workshops and the comment and reply rounds (including the understatement of urban costs) and listed the following elements of network cost which were not included in the initial BCM analysis (e.g., Drop, Pedestal, Cross-Connects, Engineering, Splicing, Inter-office Trunking, Riser Cable and Terminal Vaults). The Joint sponsors have agreed that some (but not all) of the omitted network elements would be included in the next version of the BCM. By omitting key elements of network cost, the December 1, 1995 BCM results would tend to underestimate total costs, particularly in urban areas.

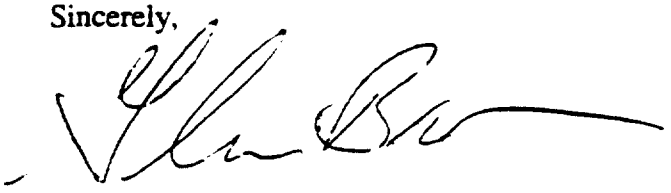
At the same time that MCI was working with U S WEST on the BCM, they were also working with AT&T and Hatfield and Associates to develop the Hatfield study. The Hatfield study incorporates some elements and algorithms of the BCM, but makes a number of changes in key BCM assumptions and algorithms which differ significantly from the consensus assumptions and algorithms developed by the Joint Sponsors. As demonstrated above, the results of these changes have a profound impact on the results of the study.

In order that there be no confusion in the upcoming Joint Board proceeding on universal service, we feel that it is important to state that the Hatfield study is not the BCM, and in no way does U S WEST support or endorse the Hatfield study or its results.

We are further concerned by the statement of the WUTC that "There simply is no local service subsidy." Using any value for the "average" cost of basic residential service implies that individual customers will be both above and below this level. We believe that the BCM offers a valuable tool to identify areas where the cost of local service is above a level which is determined to be affordable, and to design targeted support mechanisms to benefit customers living in these areas. Both the Communications Act of 1996 and the FCC's NPRM in CC Docket 96-45 correctly recognize that there is a significant subsidy to local service in rural, insular and high cost areas which must be addressed as local competition is introduced.

One final comment concerning the relationship between the results of the BCM and the cost of preserving affordable universal service must be made. The BCM develops the cost of duplicating the present LEC network using current technology and efficient network design. Incumbent carriers, such as U S WEST, have carried the obligation of providing universal service for many decades. Investments made in earlier years, utilizing the most efficient technology of that time, are legitimate costs which we are entitled to recover. The fact that, for the most part, regulators have not allowed us to depreciate this plant at rates anywhere near the pace at which technology has changed, makes the job of recovering these investments even more challenging for us and our regulators. Through an appropriate combination of targeted explicit support mechanisms and rate rebalancing, state and federal regulators must find appropriate solutions to the preservation of universal service at a time when the market economics of the local exchange industry are undergoing radical change. The BCM is but one tool in the targeting of support, and it represents only one part of sizing the problem which regulators must address if local competition is to evolve in the public interest.

Sincerely,



cc: Joint Board Commissioners (Letter only)
Joint Board Staff (Letter only)

APPENDIX C

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Request for Agency Action of PHOENIX FIBERLINK OF UTAH, INC. for Authority to Provide Intrastate Telecommunications Services in the State of Utah,	:	DOCKET NO. 95-2206-01
In the Matter of the Application of ELECTRIC LIGHTWAVE, INC. for Authority to Compete as a Telecommunications Corporation and to Offer Public Telecommunications Services,	:	DOCKET NO. 94-2202-01
In the Matter of an Investigation into Collocation and Expanded Interconnection.	:	DOCKET NO. 94-999-01

SURREBUTTAL TESTIMONY

OF

PETER B. COPELAND

U S WEST COMMUNICATIONS, INC.

MAY 1, 1996

IDENTIFICATION OF WITNESS

Q. PLEASE STATE YOUR NAME AND PLACE OF EMPLOYMENT.

A. My name is Peter Copeland. My business address is 1801 California St., Denver, Colorado. My title is Manager, Issues Management -- Public Policy for U S WEST Communications, Inc. (U S WEST).

Q. ARE YOU THE SAME PETER COPELAND WHO FILED REBUTTAL TESTIMONY?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. My surrebuttal testimony addresses AT&T's responses to the second and third sets of interrogatories and requests for production of documents of U S WEST. My testimony demonstrates that the Hatfield model is essentially closed to detailed industry inspection, including its incorporation of the BCM. Further my testimony shows that for the most part the modifications made to the BCM are based upon undocumented assumptions, improperly used data sources, or the guesses of self-

described "experts" whose sole apparent purpose is to underestimate the cost of providing a local loop.

INSPECTION OF THE HATFIELD MODEL

Q. DID U S WEST REQUEST TO SEE THE ENTIRE HATFIELD COST MODEL, INCLUDING THE PORTIONS OF THE BCM IT INCORPORATED?

A. Yes. In data request 3.1, U S WEST requested AT&T to provide a copy of the Hatfield Model and the BCM model used in Dr. Mercer's study. In its written response, AT&T refused to provide U S WEST with an electronic copy of the Hatfield model, as well as an electronic copy of Dr. Mercer's BCM model runs. AT&T's written response stated that U S WEST could arrange to see the models at the Hatfield Associates offices in Boulder, Colorado.

Q. DID HATFIELD ASSOCIATES MAKE THE HATFIELD COST MODEL AVAILABLE FOR INSPECTION AT THEIR OFFICES AT 737 29TH ST. IN BOULDER, COLORADO?

A. I was among a group of U S WEST employees who arranged with Hatfield Associates to see the Hatfield Cost Model on April 25, 1996. However, the entire Hatfield Cost Model was not available for inspection. The two BCM

modules were not available for U S WEST to inspect. The available modules were the investment module, the capital cost module and the expense module. An input sheet and an output sheet for the BCM modules were available for inspection. At this time, I again requested an electronic copy of the two BCM modules used by the Hatfield Cost Model. Not only was the electronic copy refused, but, inspection of the Hatfield runs of the BCM were also refused. In its place I was given verbal assurances that Hatfield Associates did not change the BCM logic. It is unfortunate that I have no way to verify Hatfield Associates' statement.

Q. DID YOU INSPECT THE THREE MODULES OF THE HATFIELD COST MODEL THAT WERE AVAILABLE TO YOU ON APRIL 25?

A. The inspection that was available to our group was insufficient to get even a basic understanding of these three modules of the Hatfield model. Even though AT&T states in its response to U S WEST data request 3.3 that all the inputs to the Hatfield Model are listed in Attachment 2 of his direct testimony, not a single input or assumption utilized in his investment module for calculating inter-office costs are included anywhere in his testimony or data responses. Additionally, Dr.